UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,089	04/19/2004	James Wagner Larsen	14088/299978	1884

23370 7590 10/20/2004

JOHN S. PRATT, ESQ
KILPATRICK STOCKTON, LLP
1100 PEACHTREE STREET
ATLANTA, GA 30309

EXAMINER	
LE, TOAN M	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/827,089	LARSEN, JAMES WAGNER	
	Examiner	Art Unit	
	Toan M Le	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 April 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Candy.

Referring to claim 1, Candy discloses a detection system for detecting, locating and classifying an object selected from the group of magnetic and conducting objects (col. 11, lines 4-5), the detection system adapted to detect a secondary magnetic field generated by the object in response to a primary magnetic field transmitted by the detection system, the detection system including an active subsystem for generating an alternating current magnetic field of simultaneous multiple frequencies (col., 11, lines 6-7) and a synchronous detection subsystem for accurately measuring the amplitude and phase of the secondary magnetic field (col. 11, lines 8-26).

Claim 2 is objected to as being dependent upon a rejected base claim 1, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3-8 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Won.

Referring to claim 3, Won discloses an apparatus for determining presence of an object, comprising:

a. an emitter adapted to produce and propagate a time varying primary electromagnetic field (col. 5, lines 57-59);

b. at least one sensor, the sensor adapted to receive a secondary electromagnetic field, the secondary electromagnetic field produced by the object as a function of the primary electromagnetic field (col. 5, lines 60-64);

c. the sensor couple to a receiver, the receiver adapted to determine differences in phase between the primary electromagnetic field and the secondary electromagnetic field and to provide information corresponding to identification of the material forming the object as a function of the phase differences (col. 5, lines 65-67; col. 6, lines 1-17; col. 2, lines 34-37).

As to claim 4, Won discloses an apparatus for determining presence of an object in which the at least one sensor is adapted to determine amplitude of the secondary electromagnetic field and to provide information corresponding to distance of the object to the at least one sensor (col. 2, lines 28-37).

Referring to claim 5, Won discloses an apparatus for determining presence of an object in which the at least one sensor is adapted to sense gradients in the secondary electromagnetic field (col. 6, lines 12-17).

As to claim 6, Won discloses an apparatus for determining presence of an object comprising at least two sensors, the sensors further adapted to sense amplitude and gradients in the secondary electromagnetic field, the sensors further adapted to provide information relating to direction and distance of the object from at least one of the sensors (col. 5, lines 65-67; col. 6, lines 1-9).

Referring to claim 7, Won discloses an apparatus for determining presence of an object in which the at least one sensor is adapted to provide information corresponding to identification of material forming the object based at least in part on determining from the phase differences information relating to conductivity and permeability of the material (col. 2, lines 28-37).

As to claim 8, Won discloses an apparatus for determining presence of an object in which the emitter is adapted to emit, and the at least one sensor is adapted to sense, a plurality of primary electromagnetic fields, at least some of the fields varying in at least one property from other of the fields (col. 5, lines 57-67; col. 6, lines 1-9).

Referring to claim 14, Won discloses an apparatus for determining presence of an object further comprising at least one nulling emitter adapted to produce and propagate a nulling electromagnetic field in order to reduce effects of the primary electromagnetic field on the at least one sensor (col. 1, lines 64-67).

Allowable Subject Matter

Claims 9-13 are objected to as being dependent upon a rejected base claim 3, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reason for allowance of claim 2 is the inclusion of the active subsystem for generating an alternating current magnetic field of simultaneous multiple frequencies, which is adapted to shape the transmitted field in the vicinity of the sensors in order to reduce the sensors' sensitivity to the transmitted field and to desensitize the sensors to movement with respect to the active subsystem.

The reason for allowance of claims 9-13 is the inclusion of a clock with coded, pulse modulated primary electromagnetic field adapted to shape the transmitted field in the vicinity of the sensors in order to reduce the sensors' sensitivity to the transmitted field and to desensitize the sensors to movement with respect to the active subsystem to determine the phase differences using switched capacitors and resonant power circuitry.

Both Candy and Won neither teaches nor suggests those features described above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 3,826,973 to Pflaum U.S. Patent No. 6,541,966 to Keene

U.S. Patent No. 6,534,985 to Holladay et al. U.S. Patent No. 4,628,265 to Johnson et al.

U.S. Patent No. 5,334,981 to Smith et al. U.S. Patent No. 4,507,612 to Payne

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan M Le whose telephone number is (571) 272-2276. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Toan Le

October 13, 2004

John Barlow
Supervisory Patent Examiner
Technology Center 2800